AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method comprising:

~~determining~~ calculating a target of a first occurrence of a branch instruction using a decoder;

storing the target of the first occurrence of the branch instruction before the first occurrence of the branch instruction is fully executed; ~~and~~

re-encountering the branch instruction before the first occurrence of the branch instruction is fully executed;

~~and predicting a~~ calculating a target for the re-encountered branch instruction by accessing the target stored ~~target for the branch instruction~~ prior to determining a target for the re-encountered branch instruction using the decoder and before the first occurrence of the first occurrence of the branch instruction is fully executed.

2. (Original) The method of Claim 1, wherein the branch instruction is a direct branch.

3. (Original) The method of Claim 1, wherein the branch instruction is a backward branch.

4. (Currently Amended) The method of Claim 1, wherein storing the target of the first occurrence comprises saving the target to a cache.

5. (Currently Amended) The method of Claim 4, wherein the target of the first occurrence of the branch instruction is also stored in a branch prediction unit after the first occurrence of the branch instruction has been fully executed.

6. (Currently Amended) The method of Claim 5, wherein the target for the re-encountered branch instruction is ~~predicted~~ calculated ~~for the branch instruction~~ before the target of the first occurrence of the branch instruction is stored in the branch prediction unit.

7. (Currently Amended) The method of Claim 6, wherein ~~predicting a~~ calculating a target for the re-encountered branch instruction comprises:

accessing at least one target stored in at least one of the cache and the branch prediction unit;

prioritizing the accessed targets; and

generating a branch prediction based on the prioritized targets.

8. (Currently Amended) An apparatus comprising:

a decoder to ~~determine a~~ calculate a target of a first occurrence of a branch instruction;

a cache to store the target of the first occurrence of the branch instruction before the first occurrence of the branch instruction is fully executed; and

a branch prediction unit to, upon re-encountering the branch instruction before the first occurrence of the branch instruction is fully executed, predict ~~the~~ a target of the re-encountered branch instruction by accessing the target of the first occurrence of the branch instruction stored in the cache prior to determining a target for the re-encountered branch instruction using the decoder and before the first occurrence of the branch instruction is fully executed.

9. (Original) The apparatus of Claim 8, wherein the decoder determines a target of a direct branch instruction.

10. (Original) The apparatus of Claim 8, wherein the decoder determines a target of a backward branch instruction.

11. (Currently Amended) The apparatus of Claim 8, wherein the branch prediction unit also stores the target of the first occurrence of the branch instruction after the first occurrence of the branch instruction has been fully executed.

12. (Currently Amended) The apparatus of Claim 11, wherein the branch prediction unit predicts the target for the re-encountered branch instruction before the target of the first occurrence of the branch instruction is stored in the branch prediction unit.

13. (Currently Amended) The apparatus of Claim 12, wherein the branch prediction unit predicts the target for the re-encountered branch instruction by:

accessing at least one target stored in at least one of the cache and the branch prediction unit;

prioritizing the accessed targets; and

generating a branch prediction based on the prioritized targets.

14. (Currently Amended) A system comprising:

a processor capable of pipelining instructions;

a decoder to ~~determine a~~ calculate a target of a first occurrence of a branch instruction to be executed by the processor;

a cache to store the target of the first occurrence of the branch instruction before the first occurrence of the branch instruction is fully executed by the processor; and

a branch prediction unit to, upon re-encountering the branch instruction before the first occurrence of the branch instruction is fully executed, predict ~~the~~ a target of the re-encountered branch instruction by accessing the target of the first occurrence of the branch instruction stored in the cache prior to determining a target for the re-encountered branch instruction using the decoder and before the first occurrence of the first branch instruction is fully executed.

15. (Original) The system of Claim 14, wherein the decoder determines a target of a direct branch instruction.

16. (Original) The system of Claim 14, wherein the decoder determines a target of a backward branch instruction.

17. (Currently Amended) The system of Claim 14, wherein the branch prediction unit also stores the target of the first occurrence of the branch instruction after the first occurrence of the branch instruction has been fully executed.

18. (Currently Amended) The system of Claim 17, wherein the branch prediction unit predicts the target for the re-encountered branch instruction before the

target of the <u>first occurrence of the</u> branch instruction is stored in the branch prediction unit.

19. (Currently Amended) The system of Claim 18, wherein the branch prediction unit predicts the target for the <u>re-encountered</u> branch instruction by:

accessing at least one target stored in at least one of the cache and the branch prediction unit;

prioritizing the accessed targets; and

generating a branch prediction based on the prioritized targets.

20. (New) The method of Claim 1, wherein the target of the first occurrence of the branch instruction, the target of the re-encountered branch instruction calculated, and the first target are the target of the re-encountered branch instruction determined are the same target.

21. (New) The apparatus of Claim 8, wherein the target of the first occurrence of the branch instruction, the target of the re-encountered branch instruction predicted, and the first target are the target of the re-encountered branch instruction determined are the same target.

22. (New) The system of Claim 14, wherein the target of the first occurrence of the branch instruction, the target of the re-encountered branch instruction predicted, and the first target are the target of the re-encountered branch instruction determined are the same target.